

Add the following new claims:

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- 21. A method of forming an orientation film on a substrate comprising:
providing a substrate on a stage;
positioning a slit coater having a slit nozzle on the substrate; and
spraying an orientation material having a surface tension on the substrate through
the slit nozzle of the slit coater while maintaining the surface tension of the orientation
material.

22. The method of claim 21, wherein the thickness of the orientation material
ranges from about 0.8 μm to about 1.0 μm .

23. The method of claim 21, wherein the slit nozzle is maintained at a
predetermined distance from the substrate.

24. The method of claim 21, wherein at least one laser device is provided which
irradiates a laser beam.

25. The method of claim 24, wherein predetermined portions of the orientation
material are patterned using the laser beam.

26. The method of claim 25, wherein the predetermined portions of the orientation material include a spraying surface of the orientation material.

27. The method of claim 24, wherein the laser is an excimer laser.

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28. A method of forming an orientation film on a substrate comprising:
providing the substrate on a stage;
positioning a slit coater having a slit nozzle on the substrate;
spraying an orientation material having a surface tension on the substrate through the slit nozzle of the slit coater while maintaining the surface tension of the orientation material; and
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patterning an orientation pattern at a predetermined portion of the orientation material.

29. The method of claim 28, wherein patterning the orientation pattern includes irradiating with a laser beam.

30. The method of claim 29, further comprising irradiating by means of an excimer laser.

31. The method of claim 28, wherein the predetermined portion includes a spraying surface of the orientation material.

32. The method of claim 28, further comprising rubbing the orientation material.

33. The method of claim 32, wherein the rubbing is performed after spraying.

34. The method of claim 32, wherein the rubbing is performed after forming an orientation pattern.

35. A method of forming an orientation film on a substrate, comprising:
providing the substrate on a stage;
positioning a slit coater having a slit nozzle and an orientation material, the slit nozzle being at a predetermined distance from the substrate, and
spraying the orientation material having a surface tension on the substrate through the slit nozzle of the slit coater while maintaining the surface tension of the orientation material.

36. The method of claim 35, wherein the thickness of the orientation material ranges from about 0.8 μm to about 1.0 μm .

37. The method of claim 35 further comprising providing at least one laser device irradiating a laser beam, and patterning predetermined portions of the orientation material using the laser beam.

38. The method of claim 37, wherein the laser is an eximer laser. - -

REMARKS

Claims 21-38 remain pending after amendment.

Claim Amendments

By this amendment, claims 1-20 are cancelled and rewritten as new claims 21-38.

No new matter is added by this amendment.

Priority Document

Applicants acknowledge the indication by the Examiner that a certified copy of the priority document has not yet been submitted. By separate paper, applicants submit a certified copy of the priority document for entry in the above application.

Objection to Claims

The Examiner raises several objections to original claims 1-20. In response, applicants rewrite claims 1-20 as new claims 21-38. It is believed that the newly-presented claims satisfactorily address the objections of the Examiner to the claims.

Rejection of claim 1 under 35 USC 102(e)

Claim 1 stands rejected under 35 USC 102(e) as being anticipated by Sago et al. U.S. Patent No. 6,436,472. This rejection respectfully is traversed to the extent deemed to apply to the claims as amended.

In response, claim 1 is rewritten as new claim 21.

Sago et al is directed to a method of applying a coating solution to a substrate surface using a rotary coater. In the disclosed method, a slit nozzle is positioned above an end of a glass substrate placed in an inner cup. While a coating solution is being ejected with reduced surface tension from the slit nozzle toward the glass substrate, the slit nozzle is translated parallel to the surface of the glass substrate to coat the coating solution on the glass substrate.

The reference teaches that the surface tension of the applied coating should be minimized or reduced during application of the coating to the substrate material. The Examiner's attention is directed to column 2, lines 26-29 and 59-65; column 4, lines 44-

58; and column 5, lines 6-15 of the reference for a discussion of the method by which the surface tension of the coating is reduced or minimized during the coating step.

The above teachings of the reference are in direct contrast to and inconsistent with the limitation of applicants' independent claims of "spraying an orientation material having a surface tension on the substrate through the slit nozzle of the slit coater while maintaining the surface tension of the orientation material". The Examiner's attention is also directed to the discussion of surface tension of the coating material in applicants' specification at the paragraph bridging pages 6 and 7 of the specification.

In view of the above, the claimed invention is not anticipated by the cited reference and the rejection should be withdrawn.

Rejection of claims 2-20 under 35 USC 103(a)

Claims 2-20 stand rejected under 35 USC 103(a) as being unpatentable over Sago et al '472 in view of Shinohara et al U.S. Patent No. 6,261,856. This rejection respectfully is traversed to the extent deemed to apply to the claims as amended.

The deficiencies of the primary reference Sago et al '472 are discussed in detail above. The additionally-cited Shinohara et al reference is relied upon to teach various limitations of claims 2-20. However, Shinohara et al does not cure the deficiencies of Sago et al, particularly with respect to the surface tension limitation discussed above.

In view of the above, the rejection is without basis and should be withdrawn.

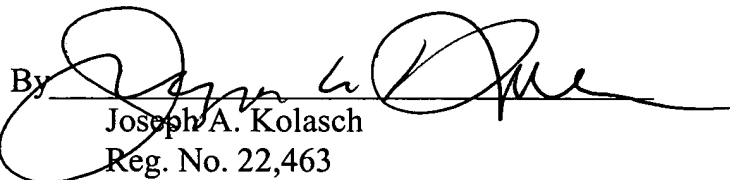
The application is now believed to be in condition for allowance and an early indication of same is earnestly solicited.

In the event that any outstanding matters remain in this application, Applicants request that the Examiner contact James W. Hellwege (Reg. No. 28,808) at (703) 205-8000 to discuss such matters.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Very truly yours,

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